CLAIMS

What is claimed is:

1.   A system for generating a pseudorandom number, comprising:

a pseudorandom number generator; and

a mapping system that assigns each number generated by the pseudorandom number generator to an output value selected from a set of predetermined output values.

2.   The system of claim 1, further comprising a programmable input for selecting the set of predetermined output values.

3.   The system of claim 1, the pseudorandom number generator further comprising a linear feedback shift register that includes at least one feedback tap.

4.   The system of claim 1, further comprising a tap selector system configured to set at least one tap of the pseudorandom number generator.

5.   The system of claim 4, the tap selector system comprises a linear feedback shift register to pseudo-randomly set the at least one tap.

6.   The system of claim 5, further comprising a seeding system configured to provide a seed to the linear feedback shift register.

7.   The system of claim 6, the seeding system further comprising a second linear feedback shift register to pseudo-randomly provide the seed.

8.   The system of claim 1, further comprising a seeding system configured to provide a pseudo-randomly generated seed to the pseudorandom number generator.

9.   The system of claim 8, the seeding system further comprising a linear feedback shift register.

10. ·   The system of claim 1, the mapping system being operative to
       determine a plurality of substantially equal intervals based on a range of the numbers capable of being generated by the pseudorandom number generator and a number of elements in the set of predetermined output values; and
       to assign an output value from the set of predetermined output values to each of the intervals.

11.   A system for generating a pseudorandom delay, comprising:
       a first linear feedback shift register for generating a pseudorandom number, the first linear feedback shift register comprises at least one tap and a variable seed value; and
       a mapping system configured to assign each pseudorandom number value to a corresponding coarse delay value, the coarse delay value associated with an interval from a plurality of substantially equal intervals based on a range of the first linear feedback register and a number of coarse delay values.

12.   The system of claim 11, further comprising a tap selector linear feedback shift register to pseudo-randomly set the at least one tap of the first linear feedback shift register.

13.   The system of claim 11, further comprising a seed selector linear feedback shift register to pseudo-randomly set the seed value of the first linear feedback shift register.

14.   The system of claim 11, further comprising a second linear feedback shift register configured to provide a fine delay value, the fine delay value including a fractional portion of the coarse delay value.

15.   The system of claim 14, further comprising a control for selecting an output delay from the group consisting of the coarse delay value, the fine delay value, and a combination of the coarse delay value and the fine delay value.

16.   The system of claim 11, the mapping system configured to assign each pseudorandom number value to a corresponding coarse delay value and a fine delay value, the fine delay value including a fractional portion of the coarse delay value.

17.   A system for generating a pseudorandom number, comprising:
        means for producing a pseudorandom number; and
        means for mapping the pseudorandom number to an output value selected from a set of output values.

18.   The system of claim 17, the set of output values having fewer members than a set of possible values of the pseudorandom number.

19.   The system of claim 17, further comprising means for pseudo-randomly changing at least one tap associated with the means for producing a pseudorandom number.

20.   The system of claim 17, further comprising means for pseudo-randomly changing an initial seed value for the means for producing a pseudorandom number.

21.   A system for generating a randomized delay for a plurality of devices where each device has an associated delay, each device comprising:

a pseudorandom number generator for generating a sequence of pseudorandom numbers, each pseudorandom number of the sequence of pseudorandom numbers corresponding to a delay factor, the pseudorandom number generator comprising:

a pseudorandom number generator for generating the sequence of pseudorandom numbers;

a mapping system for mapping each of the pseudorandom numbers to a one of a discrete number of delay values; and

a system for pseudo-randomly generating at least one of a tap setting value and a seed value for each sequence of pseudorandom numbers.

22.   The system of claim 21, the pseudorandom number generator further comprising:

a first pseudorandom number generator for generating a coarse delay; and

a second pseudorandom number generator for generating a fine delay value, the fine delay value including a fractional portion of the coarse delay value.

23.   A method, comprising:

pseudo-randomly generating a number within a predefined range of a plurality of numbers; and

mapping the pseudo-randomly generated number to an output value based on an interval associated with the pseudo-randomly generated number.

24. The method of claim 23, further comprising

determining a set of intervals for mapping the pseudo-randomly generated number by dividing a maximum range for a pseudorandom generator used to generate the pseudo-randomly generated number by a number of desired output values; and

associating each output value with a corresponding interval from the set of intervals.

25. The method of claim 23, further comprising:

pseudo-randomly changing at least one of a tap and a seed value to increase the randomness of a sequence of numbers being generated.